REMARKS

Claims 3-12 are active in the application.

Claim 3 has been amended to more accurately describe the present invention. Specifically, claim 3 has been amended to specify that any one of "information content, structure, or presentation" is adjusted in the present invention. The present invention only requires adjustment of at least one of the parameters, not necessarily all three of the parameters. This amendment is supported by, for instance, Figs. 4A and 4B which show an example of personalizing structure, without emphasis on content of the pages or presentation. The paragraph starting on page 17, line 27 explains how to model content within a page, without modeling structure or presentation. The paragraph starting on page 17, line 4 explains an example providing personalization of presentation, with no change to content and minimal change to structure.

Claim 3 has been amended to correct an error made in the most recent Response and original filing. Specifically, claim 3 has been amended to move the four sub-steps (defining, defining, organizing, declaring) to further define the representing steps, instead of generating steps. The four sub-steps of defining..., defining..., organizing..., declaring..., can most accurately be described as steps required for representing interaction sequences between a computer and a human. In the original claim 3 as filed, the 4 sub-steps should have been described as representing steps instead of generating steps.

Claims 3-6 and 11-12 were rejected under 35 USC 102(b) as being anticipated by US Patent 5,805,894 to Robison. This rejection is traversed.

The present invention provides a method for personalizing information seeking by a human interacting with a computer program. Partial evaluation is performed while a user is seeking information, and the partial evaluation of submitted information allows unique personalization capabilities. Specifically, partial evaluation allows for out-of-turn interaction and mixed-initiative interaction between the user and the computer program. Out-of-turn interaction is interaction between a human and computer that allows the human to provide un-requested pieces of information to the computer at any time.

Partial evaluation occurs when a user specifies a topic of interest or

narrows a search field. The partial evaluation is based on the interaction between the user and the computer program. After the interaction, partial evaluation is used to simplify the computer program to generate or alter an information space (e.g. collection of web pages) that is personalized for the user.

Since partial evaluation is performed, and since the computer program is altered by the partial evaluation, the present invention allows out-of-turn queries and interactions (see pages 4-5 and page 13, lines 17-22). The out-of-turn query capability provides substantial benefits in the invention in that it allows a user to find information rapidly and with less frustration and fewer forced information submissions (see pages 5-6).

By comparison, Robison teaches a very different method. Specifically, there are four significant differences between the present invention, and the Robison reference:

1) In the present invention, partial evaluation allows out-of-turn interaction between a human and a computer program, and allows personalization of an information space. Out-of-turn interaction is a particular kind of interaction, necessarily between a human and a computer. In Robison, partial evaluation is used to eliminate 'predictable branches' (i.e. predictable outcomes) before they are compiled so that the computer is not burdened with redundant or useless code (see ABSTRACT). Partial evaluation of computer code is a well-known concept for compiling computer programs, which is how partial evaluation is used in Robison. In Robison, partial evaluation is not used for generating an information space, is not used in any way to personalization an information space, and is not used to receive any information (e.g. information provided out of turn) from a human.

The Office Action argues that out-of-turn interaction is taught by Robison in col. 3, lines 25-56. This is not correct; col. 3 of Robison instead teaches 1) notation and definitions used in the specification, and 2) explanations of control flow graphs that illustrate reachable and unreachable edges. Unreachable edges are outcomes that do not correspond with any possible action. One embodiment of Robison removes all unreachable edges, and thereby simplifies the compiled code without loss of functionality. The col. 3 text in Robison is entirely unrelated to out-of-turn interaction sequences, and is unrelated to any kind of human-computer

interaction. Additionally, Robison does not teach or suggest out of turn interaction, or any kind of human-computer interaction anywhere else.

Claim 3 specifically requires out-of-turn interaction capability and partial evaluation to evaluate the information provided out of turn. Accordingly, claim 3 as written is distinct and patentable over Robison, and the rejection of claim 3 must be withdrawn.

2) The partial evaluation step and simplification step of the present invention occur while the computer program is running (e.g., after being compiled), and while the interaction is happening with the user. The present invention provides partial evaluation as part of the normal operation of the computer program while it is running. Robison, by comparison, performs partial evaluation only when the computer program is being compiled (i.e., before the computer program is running). Robison thereby provides a compiler that simplifies the program as it is being compiled (e.g. by removing "unreachable edges"). This is a very significant and fundamental difference between the present invention and Robison. This distinguishing feature of the present invention is also inherent in claim 3, which requires partial evaluation after programmatically representing interaction sequences. Claim 3 does not include steps requiring compiling, or any steps that could be construed as compiling.

3) The present invention is directed toward creating and personalizing an information space that is navigable or usable by a human. The information space is personalized based on partial evaluation of user input. The present invention is not concerned with methods for compiling computer code. Robison is directed solely toward how to make operation of compiled computer code most efficient. The code is simplified to remove redundant or useless instructions. simplifying code just before it is compiled. Robison seeks to 'clean up' code and avoid unnecessary steps so that a more efficient compiled code is generated. For example, the title of Robison describes Robison as a "Method Inside an Optimizing Compiler...". Nowhere does Robinson teach or suggest any kind of human-computer interaction, or teach or suggest any kind of alteration or customization of an information space. Claim 3, by comparison, requires that "the interaction sequences can be initiated by the user out of turn", and that the system

"automatically adjusts content structure or presentation for an individual user". Hence, Robison fails to anticipate claim 3 for this additional reason.

4) The structural variables and terminal variables in the present invention do not correspond to the l-values and r-values of Robison. In the present invention, structural variables and terminal variables are defined as follows:

structural variable: a l-value with values supplied by the user

terminal variable: a l-value with values requested by the user

It is important to note that both structural and terminal variables (according to the present invention) are l-values. A distinguishing feature of the present invention is that l-values are separated into two types: those with values supplied by the user (structural variables) and those with values requested by the user (terminal variables).

In an information space context, a l-value is something for which a specific example can be supplied, and an r-value is the actual example. For instance, 'state of the US' is an l-value since we can supply an example of 'Virginia'. 'Virginia' is the r-value. Robison does not teach separation of l-values into structural and terminal variables. The Office Action incorrectly states that "l-value and r-value correspond to structural variables", and incorrectly states that "l-value and r-value is (sic.) assigned value for terminal variables." This is incorrect because the r-values of Robison do not correspond to the terminal variables of the present invention. Robison does not teach or suggest any variables that correspond to the terminal variables of the present invention.

Additionally, even if the method of Robison were applied to human-computer interaction software, it would not result in the invention as claimed. Since Robison is limited to a method for optimizing compilation of a computer program, applying Robison to human interaction software would instead merely provide a simplified code via removal of predictable branches as the code is compiled. Applying Robison to a computer program providing human interaction would not result in changes to the information space created by the program while the computer program is running (i.e. AFTER the program is compiled). Hence, any conceivable combination of Robison with human interaction software would not produce the present invention as claimed.

Claim 4 was rejected as being anticipated by Robison, specifically, in col.

8, line 54-col. 9, line 18. This is incorrect because claim 4 requires compaction of interaction sequences. Interaction sequences necessarily are related to interaction with a human. Since Robison does not teach or suggest human interaction, there can be no compaction of interaction sequences.

Claim 5 was rejected as being anticipated by Robison, specifically, in col. 9, lines 19-61. However, this section of Robison is not concerned with simplifying a program via the source-to-source program transformation of partial evaluation, as is requires in claim 5. Instead, Robison teaches how to redirect branches for flow-control in a program. Our source-to-source transformation does not re-direct branches. Furthermore, the present Claim 5 advocates an automatic technology to do this; Robison's section gives detailed manual steps to undertake the redirection of branches.

Claim 6 was rejected as being anticipated by Robison, specifically, in col.4, lines 25-31. This is incorrect because, as noted above, Robison does not teach or suggest generating a personalized information space or any other kind of information space. Robison also does not teach or suggest providing any kind of content for a user.

In the Office Action, a typographical error was made in the rejections of claims 11 and 12. Claims 11 and 12 were actually rejected in view of Robison, as noted in the header. The Examiner acknowledged this typographical error in a telephonic conversation.

Claim 11 was rejected as being anticipated by Robison, specifically, in col. 4, lines 32-62, Fig. 1B, and Fig. 2B. This is incorrect because claim 11 requires that "the user can specify any aspect out-of-turn". Robison, as noted above, does not teach out of turn interaction, and does not teach or suggest any kind of interaction between a user and a computer.

Claim 12 was rejected as being anticipated by Robison, specifically, in col. 8, line 54-col. 9, line 18). This is incorrect because claim 12 requires that a user specify information-seeking aspects. Robison does not teach or suggest any kind of information-seeking, or interaction with a user. Also, claim 12 requires that the information-seeking aspects are represented as structural variables. Robison does not teach that information-seeking aspects can be structural variables or any other kind of variable. Finally, claim 12 requires that the program is converted back to

the information space. Robison does not teach or suggest any kind of information space.

Claims 7-10 were rejected under 35 USC 103(a) as being unpatentable over Robison in view of US Pub 2003/0090723 to Schidt-Joos. These rejections are traversed.

Regarding claim 7, neither Robison nor Schidt-Joos teaches information-seeking interaction, or the use of a browser for information seeking interaction.

Regarding claim 8, neither Robison nor Schidt-Joos teaches a user interface with a partial input specification window. Robison instead pertains to compiler technology and does not involve any user interfaces. Schidt-Joos teaches how a local party can adapt a document (e.g., an advertisement) through a browser. The present invention utilizes not just a browser but also a partial input specification window. There is no partial input specification window in Schidt Joos. In Schidt-Joos both client and server must communicate via the main browser. In the present invention, the user (client) has the additional flexibility of providing out-of-turn input via the partial input specification window.

Regarding claim 9, neither Robison nor Schidt-Joos teach that modeling can be performed using a nested programmatic model. In [0028], Schidt-Joos suggests a "hierarchy of templates" along which printing patterns can be organized. In contrast, the present invention employs a hierarchy of nested conditionals along which interaction in an information system can be organized.

Regarding claim 10, neither Robison nor Schidt-Joos teaches out-of-turn interaction, or the use of two windows to allow mixed initiative interaction. Neither reference teaches that one window allows system-mediated interaction, and a second window allows out-of-turn user-initiated interaction. Hence, the rejection of claim 10 must be withdrawn. "Server" and "client" as used in Schidt-Joos are not at all similar to first and second windows in claim 10. The server and client of Schidt-Joos do not and cannot allow mixed initiative interaction for a single user. The server of Schidt-Joos instead incorporates information from the client to produce the printing pattern

Given that neither Robison or Schidt-Joos shows the aforementioned features, no combination of the two references would make obvious the claimed combination.

In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 3-12 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,

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